Subject: 12pi basshorn subwoofer
Posted by DanaHester on Fri, 26 Oct 2007 13:18:47 GMT
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Are you still offering the build plans for the 12pi basshorn subwoofer? I've been reading your forum posts and I would like to build a set (I have a decent sized wood shop with adequate tools). I will probably order the drivers, heat exchanger and plate from you to build it.Thanks,Dana Hester

Subject: You've got mail!
Posted by Wayne Parham on Fri, 26 Oct 2007 14:19:22 GMT
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Subject: Re: You've got mail!
Posted by DanaHester on Fri, 26 Oct 2007 15:02:34 GMT
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Thanks for the quick reply, Wayne. I'll post pics as I do my build if anyone is interested. I hope to get started around Christmas.-Dana Hester

Posted by Wayne Parham on Sat, 27 Oct 2007 01:48:29 GMT
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Please do post pics of the build and write your impressions. It is helpful to hear reports from others because everyone has a different perspective. I've tried to make notes of the things I've learned, and also things from guys in the shop and other DIY builders. These things trickle into posts and get recorded for others. So please write your impressions here and post pics.Let me give you a quick check list of things to watch for:1. Build the motor chamber first.2. Draw on the side panels where the motor chamber and each flare panel will go.3. Lay one side piece on the ground and assemble the horn on its side, starting with the motor chamber and going out from there.4. Remember that in the end, you will have to match the side panel, cooling plug, motor and motor chamber. They all have to be aligned within about 1/16" or the cooling plugs won't meet the motor. So be careful with each step.5. Use PVC sheet material for a gasket for the access panel. It is available as shower pan material.6. Lightly sand the paint off the pole piece inside the vent with fine grit metal finishing sandpaper. Don't go crazy, because you just want to remove the thin

layer of paint and make a good heat path from pole piece to cooling plug. 7. Use silicon heat conductive grease between the access panel and cooling plug, and also between the motor pole piece and plug.8. After the drivers are installed, measure the driver polarity on each side before attaching the access panels. Use a 1.5v or 9v battery, connecting battery (+) to speakon (1+) and (2+) and battery (-) to speakon (1-) and (2-). Touch the cones and feel for cone motion. When the battery is connected, the cone on both drivers should move towards the throat hole. One moves inward and the other moves outward, each towards the throat hole.The cooling plug alignment is the hardest part of a DIY build. The CNC cut panels make this much easier because all the panels fit with dado grooves. When the horn is assembled, all the parts are aligned. When doing it from scratch, you must make sure that alignment is right each step of the way.The cooling plug must be installed with conductive grease or it will not work properly. It should be a snug fit, not so tight that you have to pound it in but not so loose that there is play. If it is tight, you may have an alignment problem or you may have excess material in the vent. Do not turn down the plug to make it loose, as this will make it ineffective. It must be a snug fit for proper heat transfer.Prototype construction photosProduction construction photosCooling plug driver preparation

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Posted by DanaHester on Sat, 27 Oct 2007 13:11:18 GMT
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Thank you very much for the assembly tips. I had looked at all the pics of the assembly you've posted on the forum and will refer back to them as I build. I have a nephew who runs a machine shop with CNC machines and does good work, so I'm thinking of getting him to make the plug and the panel. If he is able to do that for me, I will probably have you send me the pi decal to put on the side as per your license agreement. Has anyone tried routing grooves (to act as cooling fins) on the aluminum panel, or would that reduce too much mass in the aluminum for heat transfer? I was just thinking of those hot summer outdoor festivals next year, the extra surface area might help in cooling. (If we have another scorcher like we did this year in the south, it may need more cooling...)Another question I have is about the motor mounts: In the plans you show panels MM1, MM2(the speaker actually mounts to this panel) and MM3. On your prototype and production pics, I don't see MM1. It looks like you use the main (45 in.) side panels to close up the motor chambers so the end panels(MM1) aren't needed. Are the MM1 panels supposed to mount flush with the side panels? Is it used for extra strength? And is the aluminum plate supposed to screw into both the side panel & the MM1 panel?Sorry, that was more than one question... Thanks for your input.Dana Hester

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Posted by Wayne Parham on Sat, 27 Oct 2007 14:41:21 GMT
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I thought about adding grooves in the panel to increase surface area. You can see in it the

earliest drawings as they were included. But after testing, I found they weren't needed.You don't need fins on the cooling panel because it has far enough surface area. It doesn't even really need any airflow to work because it's oversized for the application anyway. The heat dissipates within about six inches from the plug, and by the edge of the plate the temperature is barely above ambient.When using these horns outdoors, install snaps around the diameter of the plate and attach a flap of denim or plastic over the panels to shade them from direct sunlight.To understand

the best yet!